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ABSTRACT

This essay examines the relationship between economic and educational developments in the United States in the decades prior to the Civil War. Early industrialization in the United States began during the first half of the 19th century and seems to coincide with common school expansion and reforms. Yet the link between economic and educational development during this period, which has often been pointed to by scholars, has received little close attention. This essay focuses on three aspects of the relationship between educational changes and economic development. First, the connection between early industrialization and the rise of mass public schooling is considered. A number of important scholars have proposed a close, causal relationship between early industrialization and the rise of mass public schooling. This contention greatly oversimplifies educational development during this period. Industrial development was but one among many socioeconomic factors that improved the quality of education. The second aspect examined is 19th century views of the role of education in economic productivity. While most contemporary economists emphasize the importance of education as a form of human-capital investment, very few 19-century thinkers focused on education as a means to economic productivity. Private and public schooling appear to have contributed to the economic well-being of the 19-century United States, but the lack of adequate studies limits what can be said on this issue. Third, and finally, some 19-century concepts about the relationship between social mobility and education are held up to the actual experiences of that era's population. While social mobility was a dominant belief in 19-century United States, education received less emphasis in this regard than the value of good habits and hard work. As to whether or not education was an important factor in social mobility, there is no agreement among researchers. What evidence exists suggests that schooling contributed to occupational advancement in individual cases, but perhaps universal education was less essential in the past than it may be today. (DB)

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THE ROLE OF EDUCATION IN THE ECONOMIC TRANSFORMATION OF NINETEENTH CENTURY AMERICA

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December, 1989

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PREFACE

The National Center on Education and Employment is funded by the Office of Educational Research and Improvement (OERI) of the U.S. Department of Education. The Center is based at Teachers College, Columbia University, in New York City. The RAND Corporation of Santa Monica, California, and Washington, D.C., is a partner with Teachers College in this enterprise.

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One of the notable achievements of American educational history is the shift of focus away from narrow, laudatory analyses of schools and toward more critical investigations of educational developments within broader social and historical contexts. Detailed studies on nineteenth-century communities as well as regional and national analyses of educational development provide new information about education in the past and enrich the field of social history.[1]

Similarly, economic history has expanded its scope to encompass such topics as the viability of slavery in the antebellum South and the decline of fertility in nineteenth-century America. Economists in general are exploring important new issues, such as human capital investment. One might thus expect that economic historians would also examine the relationship between education and economic development.[2]

Surprisingly, however, little consideration has been afforded to the economic aspects of nineteenth-century educational development in the United States. Although a few scholars have attempted to explore this topic, neither the economic rates of return to common schooling nor the impact of education on social mobility have received sufficient attention. As a result, we have only a limited understanding of the relationship between economic and educational developments in the past.

In order to stimulate further research and thinking about this relationship and its importance in American history, this essay will focus on the period before the Civil War, a time of great change in both the economic and educational spheres. Early industrialization in the United States began during the first half of the nineteenth century and seems to coincide with common school expansion and reforms. An examination of educational changes in the decades before the Civil War from an economic perspective may provide us with a better sense of the relationship between broad socioeconomic changes and schooling.

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[1] For some overviews of recent work on American educational history, see Sol Cohen, "The History of Education in the United States, Historians of Education and Their Discontents," in *Urban Education in the Nineteenth Century: Proceedings of the 1976 Annual Conference of the History of Education Society of Great Britain*, D.A. Reeder, ed., (London: Taylor and Francis, 1977), pp. 115-32; Lawrence A. Cremin, *Traditions of American Education* (New York: Basic Books, 1977); Michael B. Katz, "The Origins of Public Education: A Reassessment," *History of Education Quarterly* 16, No. 4 (Winter 1976), 381-407.

[2] For discussions of recent trends in economic history, see Peter D. McClelland, *Casual Explanation and Model Building in History, Economics, and the New Economic History* (Ithaca, NY: Cornell University Press, 1975); Robert W. Fogel and Stanley L. Engerman, eds., *The Reinterpretation of American Economic History* (New York: Harper and Row, 1971); and Alexander J. Field, ed., *The Future of Economic History* (Boston: Kluwer-Nijhoff, 1987).

Rather than attempting a comprehensive survey and explanation of educational developments in antebellum America, this essay will concentrate on three aspects of the relationship between educational changes and economic development. First, we will consider the connection between early industrialization and the rise of mass public schooling. Then, we will assess nineteenth-century views of the economic productivity of education from the perspective of today. Finally, we will consider some nineteenth-century concepts about the relationship between social mobility and education and hold them up to the actual experiences of that population. Given the paucity of work dealing with these topics, this essay necessarily will be speculative at times. Nevertheless, it may improve our understanding of the relationship between antebellum schooling and economic changes, and suggest avenues for future research.

Early Industrialization and the Development of Mass Education

Of the few educational and economic historians who have approached the question of educational development in America from an economic perspective, most have addressed specific aspects rather than provided detailed theoretical and empirical treatments. Two economists, Samuel Bowles and Herbert Gintis, have produced a comprehensive, neo-Marxist theory of the relationship between educational and economic development in the United States. They applied their theoretical framework to explain the origins of mass public education in the two decades before the Civil War, the relationship between corporate capital and progressive education in the early twentieth century, and the transformation of higher education in the 1960s and 1970s as a response to the emergence of a white-collar proletariat.[3] Although their theoretical and empirical work has been challenged, it remains one of the few major such attempts to link educational developments to the changes in the structure of the American economy historically.[4]

For Bowles and Gintis, there is a causal correspondence between the social relations of production and the characteristics of the educational system at that particular time. As they put it:

> We have shown that changes in the structure of education are associated historically with changes in the social organization of production. The fact that changes in the structure of production have preceded parallel changes in schooling establishes a strong *prima facie* case

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[3] Samuel Bowles and Herbert Gintis, *Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life* (New York: Basic Books, 1976).

[4] The most detailed critique of Bowles and Gintis from a Marxist perspective is Mike Cole, ed., *Bowles and Gintis Revisited: Correspondence and Contradiction in Educational Theory* (London: Falmer Press, 1988).

for the causal importance of economic structure as a major determinant of educational structure.[5]

Like several other historians, Bowles and Gintis locate the origins and reform of American mass education in the period preceding the Civil War and associate it with the industrialization of the economy:

> There can be little doubt that educational reform and expansion in the nineteenth century [were] associated with the growing ascendancy of the capitalist mode of production. Particularly striking is the recurring pattern of capital accumulation in the dynamic advanced sectors of the economy, the resulting integration of new workers into the wage-labor system, the expansion of the proletariat and the reserve army, social unrest and the emergence of political protest movements, and the development of movements for educational expansion and reform. We also find a recurring pattern of political and financial support for educational change. While the impetus for educational reform sometimes came from disgruntled farmers or workers, the leadership of the movements—which succeeded in stamping its unmistakable imprint on the form and direction of the educational innovation—was without exception in the hands of a coalition of professionals and capitalists from the leading sectors of the economy.[6]

All too often, studies of antebellum education use the terms "expansion" and "reform" interchangeably in the context of education without considering whether or not these two developments occurred simultaneously or in the same geographic areas. Nor are these terms adequately explained. Should educational expansion be measured by increased rates of adult literacy, the shift from educating children at home to educating them in schools, or the replacement of private schools by public schools? Similarly, given the wide variety of educational reforms proposed during the antebellum period, should we give them equal importance or were some innovations more central to the educational reform program than others? As we shall see, not only did educational expansion in nineteenth-century America occur in differenct places and at different times; but increases in education did not always coincide with attempts to improve existing schools.

An often-used benchmark for the origins of mass education and school reforms is the appointment of Horace Mann as Secretary of the Massachusetts Board of Education. Bowles and Gintis adopt this strategy, because it allows them to link educational changes directly to the increasing industrialization of that state in the two decades prior to the Civil War:

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[5] Bowles and Gintis, *Schooling in Capitalist America*, p. 24.

[6] Bowles and Gintis, *Schooling in Capitalist America*, pp. 178-79.

> Rapid growth in attendance paralleled these dramatic changes in the legal, financial and social structure of U.S. education. Twenty years before the Civil War, just under 38 percent of white children aged five-nineteen were attending schools. By 1860, the figure had risen to 59 percent. Thus Mann's ascendancy to the newly created Massachusetts State Board of Education in 1837, marked a major turning point in U.S. social history.[7]

While Bowles and Gintis imply that their analysis is valid for the entire country, most of their attention focuses on educational and economic developments in Massachusetts, which led the nation in industrial and urban development. It is therefore, appropriate to ask whether Mann's appointment as Secretary of the Massachusetts Board of Education really marked a major turning point in educational expansion nationalwide, as Bowles and Gintis claim.

If we focus on changes in adult literacy, the period of notable change is the seventeenth and eighteenth centuries, rather than the two decades before the Civil War. As Kenneth Lockridge has demonstrated, only about 60 percent of the men and 30 percent of the women among the first settlers of New England could sign their wills. By 1790, about 90 percent of men in New England and 50 percent of New England women could sign their wills.[8] Indeed, by 1840, only 1.1 percent of the white population in Massachusetts aged twenty and older could not read and write.[9] Thus, if one measures educational attainment in terms of adult literacy, especially adult male literacy, most of it occurred well before the Commonwealth even began to industrialize.[10]

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[7] Bowles and Gintis, *Schooling in Capitalist America*, p. 154.

[8] Kenneth A. Lockridge, *Literacy in Colonial New England: An Enquiry into the Social Context of Literacy in the Early Modern West* (New York: Norton, 1974). For more recent discussions of colonial literacy, see Linda Auwers, "Reading the Marks of the Past: Exploring Female Literacy in Colonial Windsor, Connecticut," *Historical Methods* 4 (1980), 204-214; Lee Soltow and Edward Stevens, *The Rise of Literacy and the Common School in the United States: A Socioeconomic Analysis to 1870* (Chicago: University of Chicago Press, 1981). As all of these readings point out, the use of mark-signatures to estimate literacy rates provides only a crude approximation of the actual ability of individuals in the past to read and write.

[9] Calculated from Secretary of State, *Sixth Census or Enumeration of the Inhabitants of the United States as Corrected at the Department of State in 1840* (Washington, D.C.: Blair and Rives, 1841).
On the increase in literacy in nineteenth-century England, see David Miller, "The Spread of Literacy in Nineteenth-Century England" (Ph.D. diss., University of Chicago, 1982).

[10] One should not infer too much from the differences in the ability of males and females in colonial Massachusetts to sign wills, because this probably exaggerates the differences in their abilities to read. Many colonial women were able to read the Bible, but had never been taught to write. Gerald F. Moran and Maris A. Vinovskis, "The Great Care of Godly Parents: Early Childhood in Puritan New England," in Alice B. Smuts and John W. Hagen, eds. *History and Research in Child Development*, (Chicago: Monographs of the Society for Research in Child Development, 50, Nos. 4-5, University of Chicago Press, 1985), pp. 24-37.

Perhaps a more appropriate measure of educational expansion, from the perspective of Bowles and Gintis, would be the replacement of parents by teachers as the primary educators of children. Bowles and Gintis argue that as households ceased to be production sites in the early nineteenth century, it became necessary to shift the training of children to schools that not only provided cognitive skills, but accustomed students to accept the same type of social hierarchy and discipline that they would be encountering in the newly established factories.

> The expansion and continuing transformation of the system of capitalist production led to unprecedented shifts in the occupational distribution of the labor force and constant changes in the skill requirements for jobs. Training within the family became increasingly inadequate; the productive skills of parents were no longer adequate for the needs of children during their lifetime. The apprentice system of training, which, by custom, committed masters for a period of as much as seven years to supply apprentices with room and board as well as (sometimes) minimal levels of training in return for labor services, became a costly liability as the growing severity of depressions made the demand for the products of the apprentices' labor more uncertain. The further expansion of capital increasingly required a system of labor training which would allow the costs of training to be borne by the public. Equally important, the dynamism of the capitalist growth process required a training system which would facilitate a more rapid adjustment of employment to the business cycle and allow the constantly changing dictates of profitability to govern the allocation of labor.[11]

Was there a connection between Mann's tenure as Secretary of the Massachusetts Board of Education and a dramatic increase in school enrollments? Although it is difficult to obtain detailed records on school attendance before 1840, the available evidence suggests that school attendance in Massachusetts was already high by 1800 and that it gradually increased during the next four decades. During the period from 1840 to 1860, however, school attendance in Massachusetts actually declined dramatically—the percentage of children under age twenty enrolled in any school dropped from 67.4 percent in 1840 to 56.8 percent in 1860. These figures in large part reflect the elimination of the three- and four-year-olds who had been attending infant schools earlier.[12]

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[11] Bowles and Gintis, *Schooling in Capitalist America*, pp. 157-58.

[12] Carl F. Kaestle and Maris A. Vinovskis, *Education and Social Change in Nineteenth-Century Massachusetts* (Cambridge, England: Cambridge University Press, 1980), pp. 246-47. Several earlier estimates of Massachusetts schooling show roughly the same general trends, but they have not made the appropriate adjustments for the deficiencies in the statistical data. Albert Fishlow, "The American Common School Revival: Fact or Fancy?" in *Industrialization in Two Systems: Essays in Honor of Alexander Gerschenkron* (New York: Wiley, 1966), pp. 40-67; Alexander James Field, "Educational Expansion in Mid-Nineteenth-Century Massachusetts: Human-Capital Formation or Structural Reinforcement?" *Harvard Educational Review*, 46, No. 4 (November 1976), 521-52.

As late as 1840, approximately 40 percent of all three-year-olds in Massachusetts were attending infant schools or the regular public schools. For a discussion of early-childhood education in the first half of the nineteenth century, see Dean May and Maris A. Vinovskis, "A Ray of Millennial Light: Early Education and

With the lengthening of the school year and the increasing regularity of attendance, the average annual number of days of school per child under the age of twenty increased slightly, from 60.6 days in 1840 to 62.3 days in 1860.[13] There was also a sizable shift from private to public schooling. In 1840, 18.7 percent of all those enrolled received at least some private schooling; by 1860 that proportion had dropped to 8.0 percent.[14] Nevertheless, even at the time that Mann first came to power, more than four out of five students were already attending public schools exclusively. Thus, whether one looks at the changes in the overall rate of school attendance, the average annual number of days of schooling received, or the proportion of students attending public schools in Massachusetts, the two decades before the Civil War did not witness a dramatic turning point, as suggested by the theory of Bowles and Gintis.[15]

If the percentage of Massachusetts children attending school did not increase before the Civil War, what about trends in the rest of the United States? As Albert Fishlow pointed out more than twenty years ago, there was a substantial increase in the percentage of whites nineteen years

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Social Reform in the Infant School Movement in Massachusetts, 1826-1840," in, Tamara K. Hareven, ed., *Family and Kin in Urban Communities, 1700-1930* (New York: New Viewpoints, 1977), pp. 62-99; Carl F. Kaestle and Maris A. Vinovskis, "From Apron Strings to ABCs: Parents, Children, and Schooling in Nineteenth-Century Massachusetts," in John Demos and Sarane S. Boocock, eds., *Turning Points: Historical and Sociological Essays on the Family*, (Chicago: University of Chicago Press, 1978), pp. S39-S80.

[13] Kaestle and Vinovskis, *Education and Social Change*, pp. 246-47. Some scholars argue that the increases in the length of the public school year in Massachusetts occurred in the more urban and industrial communities. Alexander James Field, "Economic and Demographic Determinants of Educational Commitment: Massachusetts, 1855," *Journal of Economic History* 39, No. 2 (June 1979), 439-59; Martin Carnoy and Henry M. Levin, *Schooling and Work in the Democratic State* (Stanford: Stanford University Press, 1985), p. 85. But the large increases in the length of Massachusetts public schools from 1826-1875 actually occurred in the smaller communities, rather than in the larger and more industrial cities. Maris A. Vinovskis, *The Origins of Public High Schools: A Re-Examination of the Beverly High School Controversy* (Madison, WI: University of Wisconsin Press, 1985), pp. 12-14.

[14] Calculated from Kaestle and Vinovskis, *Education and Social Change*, pp. 238-47. The estimate of private school attendance in 1840 includes those students who went to both public and private schools in the same year. This occurred because public schools at that time, but not in 1860, were often closed for lack of funds and then reopened with the same teacher who was now paid by the parents of the students continuing to attend. If we eliminate those students who attended both private and public schools in 1860, the percentage of students in private schools only would be 12.9 percent—thus greatly reducing the shift from private to public schooling from 1840-1860.

[15] Bowles and Gintis acknowledged that school attendance did not increase in Massachusetts during the two decades before the Civil War, but they did not seem to realize how this seriously undermines their theory and assertions. Instead, they simply observed that in this respect Massachusetts was atypical of the rest of the nation. Bowles and Gintis, *Schooling in Capitalist America*, p. 173.

old and younger attending schools between 1840 and 1860.[16] Enrollment in New England—one of the most industrialized areas—declined from 81.8 percent of whites under age twenty attending school in 1840 to 73.8 percent in 1860. The largest increases occurred in the largely agricultural North Central states, where the percentage of attendance rose from 29.0 percent in 1840 to 70.3 percent in 1860.[17]

A similar picture emerges if we estimate the distribution of the total number of new students between 1840 and 1860 by region. Whereas the more industrialized regions—New England and the Middle Atlantic—contributed only 2.7 percent and 21.7 percent respectively of new students, the North Central region accounted for 55.7 percent of the additional students during those two decades.[18]

Whether one looks at the state of Massachusetts specifically or at all of the regions of the country, there is little evidence that industrialization caused or even preceded the growth of mass public education in the United States. Mass public schooling preceded industrialization in Massachusetts, and the greatest increases in school attendance occurred in the largely agricultural North Central region. Thus, unlike the situation in much of Western Europe,

> North American development, particularly Canadian industrialization, but also that in the United States, came comparatively much later. Importantly, it followed the attainment of near-universal levels of literacy (among the white population) and the establishment and expansion of public systems for mass elementary education (though not much secondary schooling).[19]

Bowles and Gintis are correct, however, in pointing to the increased reform activity focused on schools during the 1830s, 1840s, and 1850s—much of it directed to the urban and industrializing communities of the Northeast. Educators like Henry Barnard and Mann emphasized the need for improvements: better-trained teachers, more public funds for schools, more regular school attendance, and a consolidation and centralization of the existing public schools system. In the

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[16] Fishlow, "The American School Revival."

[17] Vinovskis, *The Origins of Public High Schools*, p. 123.

[18] Vinovskis, *The Origins of Public High Schools*, p. 15.

[19] Harvey J. Graff, *The Literacy Myth: Literacy and Social Structure in the Nineteenth-Century City* (New York: Academic Press, 1979), p. 231. Graff, however, does not seem to be aware that his description of the timing of educational development and industrialization conflicts with the assertions of Bowles and Gintis.

Midwest and the South, school promoters were concerned about the quantity as well as the quality of schooling being offered, but in the Northeast the main emphasis was on the quality of that education.[20]

Bowles and Gintis, like many of the other so-called revisionist historians of education, emphasize the important part that manufacturers, aided by professionals, played in initiating common school reforms. Rejecting the more traditional characterization of educational reformers as benign humanitarians, scholars like Alexander Field, Michael Katz, Bowles, and Gintis stress that manufacturers were active in the school reform movement because of their fear of the social unrest caused by the industrialization of the economy. Also contrary to earlier interpretations, which emphasized the contributions of workers, revisionists like Katz argue that schooling was imposed upon the workers by the capitalists.[21]

Several observations can be made about the relationship between early industrialization and antebellum school reforms. First, although educators devoted much of their attention and energy to improving urban schools, they were also concerned with rural schools, which faced somewhat different problems from their urban counterparts. For example, while urban schools struggled to provide enough classroom seats for everyone and to get immigrant children to attend public schools regularly, rural schools were more concerned about extending the length of the public school year. Therefore, the impetus toward educational reform in states like Massachusetts was not confined only to those areas that were rapidly becoming urbanized and industrialized but was felt throughout the entire society.

Second, reform efforts were not restricted to the Northeast, as is often implied. Simultaneous with Mann's activities were the educational reform efforts of John Pierce in Michigan, Calvin Stowe in Ohio, and Calvin Wiley in North Carolina. Thus, the suggestion that antebellum

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[20] There are many useful surveys of antebellum reforms, such as Robert L. Church, *Education in the United States: An Interpretative History* (New York: Free Press, 1976) and Lawrence A. Cremin, *American Education: The National Experience, 1783-1876* (New York: Harper and Row, 1980). The best-balanced treatment of antebellum educational reformers and their critics is Carl F. Kaestle, *Pillars of the Republic: Common Schools and American Society, 1780-1860* (New York: Hill and Wang, 1983).

[21] For some of the recent work on antebellum education by revisionist historians, see Bowles and Gintis, *Schooling in Capitalist America*; Alexander Field, "Educational Reform and Manufacturing Development in Mid-Nineteenth-Century Massachusetts" (Ph.D. diss., University of California, Berkeley, 1974); and Michael B. Katz, *Reconstructing American Education* (Cambridge, MA: Harvard University Press, 1987). For a critique of the revisionist approach, see Diane Ravitch, *The Revisionists Revised: A Critique of the Radical Attack on the Schools* (New York: Basic Books, 1978).

educational reforms arose mainly in response to social tensions generated by industrialization ignores the parallel movements that occurred in other, largely rural and agricultural, states.[22]

Third, the revisionists stress the leadership of manufacturers and capitalists in promoting educational expansion and reform, but they frequently neglect the contribution of others, such as the clergymen. Katz, in his now-classic study of the abolition of the public high school in Beverly, Massachusetts in 1860, stressed that support for that institution came principally from manufacturers and businessmen.[23] Yet he failed even to acknowledge that the most influential and vocal proponents of the public high school on the Beverly School Committee were the Protestant ministers.[24]

Fourth, whereas the revisionists often portray public education as being imposed upon an indifferent, if not hostile, working class, there are strong indications that many, perhaps most, workers welcomed the creation and maintenance of public schools. Although workers were sometimes divided on aspects of educational strategy, such as the trade-off between the creation of public high schools and further funding for common schools, they agreed on the importance of all children receiving at least some common school training.[25]

Finally, scholars like Bowles and Gintis portray schools as preparing students only for the social relations of production, by alienating them from each other through intense individualistic competition and by accustoming them to bureaucratic hierarchical structures in schools, which parallel those they will encounter in the workplace. For these analysts, schools correspond to the workplace and are dominated by the interests and needs of the capitalists.[26] However, contradictory

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[22] Carl F. Kaestle, "The Development of Common School Systems in the States of the Old Northwest," in eds. Paul H. Mattingly and Edward W. Stevens, Jr. *"Schools and the Means of Education Shall Forever Be Encouraged": A History of Education in the Old Northwest, 1787-1880*, (Athens, OH: Ohio University Libraries, 1987), pp. 31-43.

[23] Michael B. Katz, *The Irony of Early School Reform: Educational Innovation in Mid-Nineteenth-Century Massachusetts* (Cambridge, MA: Harvard University Press, 1968).

[24] Vinovskis, *The Origins of Public High Schools.*

[25] Kaestle, *Pillars of the Republic*; Ira Katznelson and Margaret Weir, *Schooling for All: Class, Race, and the Decline of the Democratic Ideal* (New York: Basic Books, 1985); Vinovskis, *Origins of Public High Schools.* Sometimes the revisionists are not aware of their contradictory stances on the support of workers for public education. Graff, for example, states "[t]hat workers desired educational provision cannot be doubted." Graff, *The Literacy Myth*, p. 209. Yet he fails to acknowledge that this differs from Katz's interpretations.

[26] Bowles and Gintis, *Schooling in Capitalist America.*

tendencies, including an emphasis on democracy and equality, exist within schools, and school systems have some degree of autonomy. As Martin Carnoy and Henry Levin have suggested:

> The dynamic of the American educational system . . . can best be understood as part of a much wider social conflict arising in the nature of capitalist production, with its inequalities of income and power. These inequalities lead to struggles by subordinate, relatively powerless groups for greater equality, economic security, and social control. In a politically democratic society, the State provides space for such struggles. In public education . . . the social conflict is expressed in the conflict between reforms aimed at reproducing the inequalities required for social efficiency under monopoly capitalism and reforms aimed at equalizing opportunities in pursuit of democratic and constitutional ideals.[27]

By now it should be apparent that a close, causal relationship between early industrialization and the rise of mass public schooling, proposed by Bowles and Gintis, is neither an accurate nor an adequate portrayal of educational development in America. Indeed, there is no single, simple explanation for the growth of mass public schooling, a complex phenomenon whose origins vary regionally. In New England, for which we have the most detailed studies, the impetus educating children came from the early settlers' Puritanism, which required that everyone be able to read the Bible. This motive was later seconded by the growing recognition that sons who planned to enter professions or pursue commercial careers needed further schooling.[28]

The religious emphasis on the importance of education persisted throughout the colonial period and was reinforced after the American Revolution. As barriers to white male suffrage were lowered and as political participation increased with the unanticipated rise of political parties, schooling was seen as a means of educating the electorate and preserving the Republic.[29] The role of mothers as the educators of the next generation of leaders and voters provided a convenient and important rationale for giving women more access to formal schooling as well.[30]

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[27] Carnoy and Levin, *Schooling and Work in the Democratic State*, p. 24. Unlike Bowles and Gintis, Carnoy and Levin don't see the capitalists in ascendancy in the struggle for the control of schools until the late nineteenth century. However, Carnoy and Levin appear to exaggerate the role and influence of business people in that period in structuring and running the public schools.

[28] Soltow and Stevens, *The Rise of Literacy and the Common School in the United States.*

[29] Lawrence A. Cremin, *American Education: The Colonial Experience, 1607-1783* (New York: Harper and Row, 1970).

[30] Linda K. Kerber, *Women of the Republic: Intellect and Ideology in Revolutionary America* (Chapel Hill, NC: University of North Carolina Press, 1980); Mary Beth Norton, *Liberty's Daughters: The Revolutionary Experience of American Women, 1750-1800* (Boston: Little Brown, 1980).

Thus, the ideological justifications for widespread schooling were already well in place in New England—as were the institutions designed to deliver these services—before the increasing urbanization and industrialization of that region occurred, in the 1820s and 1830s.

Nevertheless, while Bowles and Gintis and other scholars may have greatly exaggerated the immediate, direct impact of early industrialization on educational developments in New England, that industrialization certainly contributed to an environment in which already high levels of education could be sustained and improved in quality. Nineteenth-century anxiety about unrest in urban and industrial settings, particularly those in which large numbers of immigrants lived, reinforced a belief that public education was necessary not only to enhance the lives of individuals, but also to preserve and protect society.[31] Too, the increase in population density and the growth of aggregate wealth, deriving in part from the manufacturing sector, made it easier to implement improvements in public common schools.[32] Although the total direct costs of public and private schooling increased substantially during the antebellum period, education expenditures as part of the gross national product increased only slightly.[33] As a result, early industrialization was one among other socioeconomic changes that contributed to improvements in the quality of education provided in New England communities. Although industrialization played an even smaller role in the rapid expansion of public education in other regions, the general social and economic transformation of society in those areas also helped to create settings in which educational growth and improvement could occur.

The Economic Productivity of Education

Education as a form of investment in human capital was recognized as an important component of economic development in the 1960s. Numerous articles and books extolled more schooling in developing countries as a way to stimulate national economic growth and individual

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[31] Graff, *The Literacy Myth.* Carnoy and Levin, *Schooling and Work in the Democratic State.*

[32] Soltow and Stevens, *The Rise of Literacy and the Common School in the United States.*

[33] Albert Fishlow, "Levels of Nineteenth-Century American Investment in Education," in Robert W. Fogel and Stanley L. Engerman, eds., *The Reinterpretation of American Economic History* (New York: Harper and Row, 1971), pp. 265-73.

well-being.[34] Although enthusiasm for this human-capital approach diminished somewhat over the following decade, as many of the exaggerated claims of the previous studies were corrected, there has been renewed interest during the 1980s.[35]

In the wake of the spate of studies that viewed schooling as a form of human investment, efforts were made to investigate the economic productivity of education in the past. Scholars searched the writings of classical economists for any discussions of human-capital investment.[36] Others speculated on the role of education in the economic growth of the West.[37] A few individuals investigated the impact of schooling on nineteenth-century American economic development, but most economic and education historians have failed to address this subject altogether.[38]

Even during the mercantile period of the seventeenth and eighteen centuries, with its emphasis on tangible wealth, some writers recognized the importance of learning and science in stimulating economic development. Though the word "education" was seldom mentioned, pre-Smith economists wrote of "art," meaning knowledge or skill. Among the goals of public policy were increasing a nation's fund of knowledge and making its citizens into more skillful producers.[39]

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[34] Mark Blaug, ed., *Economics of Education: Selected Readings* (Harmondsworth, England: Penguin Books, 1968) 1; C. Arnold Anderson and Mary Jean Bowman, eds., *Education and Economic Development* (Chicago: Aldine, 1965).

[35] Theodore W. Schultz, *Investing in People: The Economics of Population Quality* (Berkeley: University of California Press, 1981); George Psacharopoulos and Maureen Woodhall, *Education for Development: An Analysis of Investment Choice* (New York: Oxford University Press, 1985).

[36] John Vaizey, *The Economics of Education* (London: Faber and Faber, 1962); E.A.J. Johnson, "The Place of Learning, Science, Vocational Training, and 'Art' in Pre-Smithian Economic Thought," *Journal of Economic History* 24, No. 2 (June 1964), 129-144; Rudolph C. Blitz, "Education in the Writings of Malthus, Senior, McCulloch and John Stuart Mill," in Mary Jean Bowman, et al., eds., *Readings in the Economics of Education*, (New York: Unesco, 1968), pp. 40-48.

[37] C. Arnold Anderson and Mary Jean Bowman, "Education and Economic Modernization in Historical Perspective," in Lawrence Stone, ed., *Schooling and Society: Studies in the History of Education* (Baltimore: Johns Hopkins University Press, 1976), pp. 3-19; Richard A. Easterlin, "A Note on the Evidence of History," in C. Arnold Anderson and Mary Jean Bowman eds., *Education and Economic Development* (Chicago: Aldine, 1965), pp. 422-29.

[38] Graff, *The Literacy Myth*; Maris A. Vinovskis, "Horace Mann on the Economic Productivity of Education," *New England Quarterly* 43, No. 4 (December 1970), 550-71; Field, "Educational Expansion in Mid-Nineteenth Century Massachusett."

[39] Johnson, "The Place of Learning."

Education received more explicit treatment in the writings of the English classical economists, such as Adam Smith and J.R. McCulloch, but their theoretical contribution to the current human-capital debate was much more limited than some scholars have suggested. Although they sometimes mentioned education, and a few even endorsed governmental support for schooling, they did not attach much importance to the role of education in fostering economic growth.[40]

Adam Smith, for example, briefly acknowledged that monetary rewards had to be provided to compensate workers for acquiring skills. But he did not develop the implications of his insights on the determinants of the relative wages paid to skilled and unskilled workers. Instead, he expressed concern that the increasing division of labor in a modern economy—a development he strongly favored—might lead to social and political unrest, which education could help to contain. Social control, rather than economic improvement of the individual, became his major rationale for state aid to education:

> Though the state was to derive no advantage from the instruction of the inferior ranks of people, it would still deserve its attention that they should not be altogether uninstructed. The state, however, derives no inconsiderable advantage from their instruction. The more they are instructed, the less liable they are to delusions of enthusiasm and superstition, which, among ignorant nations, frequently occasion the most dreadful disorders. An instructed and intelligent people besides, are always more decent and orderly than an ignorant and stupid one . . . . In free countries, where the safety of government depends very much upon the favourable judgment which the people may form of its conduct, it must surely be of the highest importance that they should not be disposed to judge rashly or capriciously concerning it.[41]

American economic writers, following the lead of their English colleagues, frequently alluded to the salutary effects of education, but did not devote much attention to this subject in the first half of the nineteenth century. However, they did mention more frequently than their English counterparts, the value of education in improving the productivity of workers.[42] Nevertheless, their

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[40] The best and most balanced treatment of the ideas of the classical English economists on education is Mark Blaug, *Economic History and the History of Economics* (New York: New York University Press, 1986).

[41] Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (New York: Modern Library, 1937), pp. 739-40).

[42] In part this may be due to the fact that all Americans, even conservatives, supported mass education and therefore may have been less reluctant to extol the virtues of schooling for workers. Carl F. Kaestle, "'Between the Scylla of Brutal Ignorance and the Charybdis of a Literary Education: Elite Attitudes Toward Mass Schooling in Early Industrial England and America," in Lawrence Stone, ed., *Schooling and Society: Studies in the History of Education* (Baltimore: Johns Hopkins University Press, 1976), pp. 177-91.

emphasis was less on the beneficial aspects of schooling to the individual worker than on its impact on the nation as a whole by fostering useful inventions or preserving social and political tranquility. Willard Phillips, clearly drawing in part upon the work of Adam Smith, saw in education both a means of increasing worker productivity and preserving the Republic:

> It is the leading policy of the country to extend instruction to all classes, it being well understood that not only the industrial productive faculties of the nation, but also its political existence, depend upon the intelligence and good sense of the great mass of the population. A people less free from paroxysms of passion, folly, and superstition, would at once demolish such a political fabric as ours.[43]

Similarly, Francis Wayland's popular textbooks advocated government support for education, not only to advance science and stimulate inventions, but also to disseminate that information by educating the public:

> And, in general, it is evident that, with a given amount of labor and of capital, production will be exactly in proportion to the knowledge which the operator possesses of the laws which govern that department in which he labors, and to the degree in which his labor conforms to his knowledge . . . . Thus we see how it is, that an intelligent people is always industrious, and an ignorant people always indolent. Hence, one of the surest means of banishing indolence, is to banish ignorance from a country.[44]

Yet despite Wayland's recognition of the role of knowledge in a worker's productivity, he considers the moral character of an individual even more important:

> For, where virtue, frugality, and respect for right exist, riches will, by natural consequence, accumulate; and intellectual cultivation will, of necessity, succeed. But, intellectual cultivation may easily exist, without the existence of virtue or love of right. In this case, its only effect is, to stimulate desire, and this, unrestrained by the love of right, must eventually overturn the social fabric which it at first erected. Hence, the surest means of promoting the welfare of a country is, to cultivate its intellectual, but especially its moral character.[45]

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[43] Willard Phillips, *A Manual of Political Economy with Particular Reference to the Institutions, Resources, and Condition of the United States* (Boston: Hilliard, Gray, Little, and Wilkins, 1828).

[44] Francis Wayland, *The Elements of Political Economy* (4th ed.; Boston: Gould, Kendall, and Lincoln, 1843), p. 127. This textbook went through at least twenty-three editions before 1876, sold over 50,000 copies, and dominated the field. Cremin, *American Education: The National Experience, 1783-1876*, p. 133.

[45] Wayland, *Elements of Political Economy*, p. 131.

Thus, while American economists held somewhat broader views of the role of education in economic development than the English classical economists, both groups emphasized the importance of education in preserving the social and political harmony of society. Education as an investment in human capital, though mentioned by American economists, was neither stressed nor developed.

If most nineteenth-century American economists saw education as a means of preserving the existing social and political order, some workers saw in education an escape from their employers' domination. During the 1820s and 1830s, workers joined together to call for free public education. Although the workers' attempts to organize themselves into a separate political movement failed, both the Democrats and Whigs sought to accommodate their demands for more public schooling (though the two parties disagreed on how that education should be provided and controlled).[46]

Yet the leaders of the workers who demanded free universal public schooling did not emphasize the increased productivity deriving from education for either employee or employer.[47] Instead, they saw in education a way to enable workers to participate more equally and independently as employees and voters. Seth Luther, for example, in his pamphlet on education never even discussed the role of education in raising workers' productivity, but only its value for political participation. Furthermore, like many other workers' leaders, Luther pointed out that the economic necessity for children to work in the factories and mills meant that they could not receive a common school education:

> The situation of the producing classes in New England is at present very unfavorable to the acquisition of mental improvement. That 'the manufacturing establishments are extinguishing the flame of knowledge,' we think has been abundantly proved. It is true there is a great cry about the schools and lyceums, and books of '*sentiment*, and *taste*, and *science*,' *especially* at Waltham. But of what use is it to be like Tantalus, up to the chin in water, if we cannot drink . . . . The whole system of labor in New England, more *especially in cotton mills*, is a cruel system of exaction on the bodies

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[46] Frank Tracy Carlton, *Economic Influences upon Educational Progress in the United States, 1820-1850* (Madison: University of Wisconsin Press, 1908); Kaestle, *Pillars of the Republic*.

[47] Perhaps one of the reasons why many early Americans did not focus on the economic productivity of education is because much of the actual training of skilled workers had been provided through the institution of apprenticeship, rather than formal schooling, in colonial and early-nineteenth-century America. As apprenticeships became more informal and less prevalent in the first quarter of the nineteenth century, alternative sources of training youth were sought. For a useful discussion of the character and demise of apprenticeship in nineteenth-century America, see W.J. Rorabaugh, *The Craft Apprentice: From Franklin to the Machine Age in America* (New York: Oxford University Press, 1986).

and minds of the producing classes, destroying the energies of both, and for no other object than to enable the 'rich' to 'take care of themselves,' while 'the poor must work or starve.'[48]

In the two decades prior to the Civil War, educators stressed the economic value of schooling; later working-class writers also devoted attention to the economic benefits of education to the individual. But the value placed on education by these was not always identical to that given it by educators or capitalists. As Harvey Graff notes in his analysis of Ontario workers:

> Labor, in spite of its acceptance of hegemony and an apparent clamor for equal educational opportunity, deviated from the major premise of leading schoolmen who sought more education of the working class for greater productivity. Ambivalent about the proper role, form, and content of education, recognizing some contradictions, and often placing its benefits and application quite aside from their jobs, they sought to be free and independent, powerful in ways that would not have pleased the men who desired to have the masses educated. More fundamentally, they did not always equate education solely with the skills (in either an academic or a practical sense) required to gain and perform a good job.[49]

The individual in mid-nineteenth-century America most responsible for exploring and publicizing the idea of the economic productivity of education was Horace Mann. In his famous *Fifth Annual Report* he made a serious, though ultimately flawed, attempt to estimate the actual rate of return to education, based upon information about the earnings of textile workers.[50]

According to Merle Curti, Mann always had emphasized the economic value of education during his tenure as the Secretary of the Massachusetts Board of Education.[51] A closer examination of his writings, however, suggests otherwise. Only when the Massachusetts House Committee on

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[48] Seth Luther, *An Address to the Working-Men of New England, on the State of Education, and on the Condition of the Producing Classes in Europe and America* (Boston: Seth Luther, 1832). Attention was also given to the role of education in the writings of supporters of the workers, such as Stephen Simpson. Stephen Simpson, *The Working Man's Manual: A New Theory of Political Economy, on the Principle of Production the Source of Wealth* (Philadelphia: Thomas L. Bonsal, 1831).

[49] Graff, *The Literacy Myth*, p. 215. On the later emphasis by both capitalists and workers on vocational education, see Harvey A. Kantor, *Learning to Earn: School, Work, and Vocational Reform in California, 1880-1930* (Madison: University of Wisconsin Press, 1988).

[50] *Fifth Annual Report of the Board of Education Together with the Fifth Annual Report of the Secretary of the Board* (Boston: Dutton and Wentworth, 1842).

[51] Merle Curti, *The Social Ideas of American Educators* (Paterson: Littlefield and Adams, 1965).

Education recommended abolishing the Board of Education did Mann undertake to demonstrate the importance of schooling to the economic development of the state.[52]

Mann sent a questionnaire to leading manufacturers or their agents at the textile mills in Lowell. On the basis of the few replies he received, Mann argued that education was the most productive investment any individual or community could make:

> They [his evidence] seem to prove incontestably that education is not only a moral renovator, and a multiplier of intellectual power, but also that it is also the most prolific parent of material riches. It has a right, therefore, not only to be included in the grand inventory of a nation's resources, but to be placed at the very head of the inventory. It is not only the most honest and honorable, but the surest means of amassing property.[53]

He went on to compare industrialization in Massachusetts and England and concluded that the process was successful in the former because of the highly educated labor force in that state:

> It is a fact of universal notoriety, that the manufacturing population of England, as a class, work for half, or less than half the wages of our own. The cost of machinery there, also, is but about half as much as the cost of the same articles with us; while our capital when loaned, produces nearly double the rate of English interest. Yet, against these grand adverse circumstances, our manufacturers, with a small percentage of tariff successfully compete with English capitalists, in many branches of manufacturing business. No explanation can be given of this extraordinary fact, which does not take into account, the difference of education between the operatives in the two countries.[54]

Mann maintained that education made workers more industrious, reliable, and punctual. Education also made it possible for the worker to tend to increasingly complex machinery and encouraged the farmer to utilize chemical fertilizers and crop rotation to enhance the quality of the soil. Mann observed that educated workers were more apt to be content with their employment and less given to disruptive strikes. The major benefit of education for Mann, however, was the inventiveness of employees. Educated workers were more likely to discover and implement labor-saving ways of doing their jobs.

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[52] Kaestle and Vinovskis, *Education and Social Change in Massachusetts.*

[53] *Fifth Annual Report*, pp. 100-101.

[54] *Fifth Annual Report*, pp. 110-11.

The business people who replied to Mann's questionnaires endorsed his views on the importance of education. Unlike Mann, however, they stressed better work discipline and greater loyalty to management, rather than inventiveness, as the most important advantages of educated workers. H. Bartlett, for example, briefly acknowledged that educated workers "more frequently devise new methods of operation" than uneducated ones, but then went on at much greater length about the positive effects of education upon the social and work habits of the workers:

> I have never considered mere knowledge, valuable as it is in itself to the laborer, as the only advantage derived from a good Common School education. I have uniformly found the better educated as a class possessing a higher and better state of morals, more orderly and respectful in their deportment, and more ready to comply with the wholesome and necessary regulations of an establishment. And in times of agitation, on account of some change in regulations or wages, I have always looked to the most intelligent, best educated, and the most moral for support, and have seldom been disappointed. . . . But the ignorant and uneducated I have generally found the most turbulent and troublesome, acting under the impulse of excited passion and jealousy.[55]

Only two of the four respondents to Mann's questionnaire provided specific estimates of wage differentials for educated and uneducated workers. J.K. Mills observed that literate workers on the average earned 27 percent more than illiterate ones, and J. Clark put that figure at 18.5 percent. The wage differentials between the highest-paid literate workers and the lowest-paid illiterate workers were reported as 66 percent by Mills and 40 percent by Clark.[56]

Based upon these replies, Mann claimed that educated workers earned about 50 percent more than uneducated ones. While his estimate apparently is based upon a rough average of the reports from the two respondents, there are several statistical and conceptual problems with his calculations. By using the extreme wage differentials of the literate and illiterate workers, Mann was looking at the unusual rather than the typical cases. If he had used the wage differentials for the averages of literate and illiterate workers, his estimated value of education would have been reduced considerably. In addition, since almost everyone in Massachusetts was already literate at the time, a more appropriate figure would have been the rate of return for an additional year of common school education, rather than one quantifying the advantage of literacy over illiteracy. Finally, since

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[55] *Fifth Annual Report*, pp. 93-94.

[56] *Fifth Annual Report*, pp. 91, 98.

teenage children frequently were in the paid labor force in antebellum Massachusetts, the actual rate of return to education would be smaller, due to the opportunity costs of attending school.[57]

If Mann's estimates of the rate of return for educated workers are limited and inadequate, his focus on this issue and his attempt to quantify it were innovative and important. Mann's contemporaries accepted his reasoning and calculations enthusiastically and without reservation. The *Fifth Annual Report* was widely cited, and the New York legislature ordered 18,000 copies of it to be printed. A group of prominent Boston business people acknowledged his achievements in showing the economic benefits of public education:

> You have demonstrated that the arm of industry is served, and the wealth of the country is augmented, in proportion to the diffusion of knowledge, so that each humble school-house is to be regarded, not only as a nursery of souls, but a mine of riches.[58]

John D. Philbrick, another educational leader, said in 1863 that the *Fifth Annual Report* had "probably done more than all other publications written within the past twenty-five years to convince capitalists of the value of elementary instruction as a means of increasing the value of labor."[59]

Was Mann correct in claiming that education was an important factor in enhancing the economic productivity of antebellum American workers? Scholars continue to be sharply divided on this issue.

Many analysts, such as Field, question the overall contribution of education to workers from a human capital perspective. They point out that early industrialization did not require a larger number of skilled workers, but in fact permitted less-skilled ones to replace better-trained artisans. The rise of mass education, according to these scholars, was not a response to a demand for better-

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[57] For a more detailed discussion of Mann's methodology, see Vinovskis, "Horace Mann on the Economic Productivity of Education."

[58] Letter to Horace Mann from thirty-four Bostonians, January 13, 1845, Massachusetts Historical Society.

[59] National Teachers' Association, *Journal of Proceedings and Lectures* (Chicago, 1863), p. 56 as quoted by Curti, *Social Ideas of American Educators*, p. 113.

educated workers, but an effort to socialize a labor force that was becoming increasingly restive and unruly during the social transformation of the economy.[60]

Others, like Douglass North, argue that industrialization in America increased the demand not only for new, labor-saving inventions, but for a more educated and skilled labor force that was capable of adapting and modifying English manufacturing techniques to the American setting:

> While the operatives in the factory itself may not be required to possess substantial skills, the spread of manufacturing with expansion in the size of the market leads to vertical disintegration and the development of a host of highly trained and skilled ancillary and complementary functions. I am thinking not only of the development of specialized capital-goods industries and wholesale and retail marketing facilities, but equally of the wide variety of professional services which are required. Physicists, chemists, engineers, lawyers, etc., all are necessary to the spread of manufacturing.[61]

Human-capital analysts of nineteenth-century education often focus too narrowly on the manufacturing sector or concentrate mainly on the productivity of male workers. Yet schooling provided opportunities for women to enter professions, especially teaching.[62] Indeed, after the Irish workers came to the textile mills, the pay of female schoolteachers exceeded that of female mill hands.[63] Nevertheless, the actual rate of return to that education was limited by the fact that most female schoolteachers in antebellum America taught for only a few years before leaving the paid labor force when they married.[64]

At this time there is no way to determine definitively the impact of education on nineteenth-century American economic development. Everyone seems to agree that education

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[60] Field, "Educational Expansion in Mid-Nineteenth-Century Massachusetts."

[61] Douglass C. North, "Capital Formation in the United States During the Early Period of Industrialization: A Reexamination of the Issues," in Robert W. Fogel and Stanley L. Engerman, eds., *The Reinterpretation of American History* (New York: Harper and Row, 1971), p. 277.

[62] Geraldine J. Clifford, "'Marry, Stitch, Die or Do Worse': Educating Women for Work," in Harvey Kantor and David B. Tyack, eds., *Work, Youth and Schooling: Historical Perspectives on Vocationalism in American Education*, (Stanford: Stanford University Press, 1982), pp. 223-68.

[63] Susan B. Carter and Mark Prus, "The Labor Market and the American High School Girl, 1870-1928," *Journal of Economic History* 47, No. 1 (March 1982), 163-71.

[64] Richard M. Bernard and Maris A. Vinovskis, "The Female School Teacher in Ante-Bellum Massachusetts," *Journal of Social History* 10, No. 3 (Spring 1977), 332-45; Richard M. Bernard and Maris A. Vinovskis, "Beyond Catherine Beecher: Female Education in the Antebellum Period," *Signs* 3, No. 4 (Summer 1978), 856-69.

helped to foster an environment in which conflicts between labor and capital were minimized and the regularity and the discipline of the work force was enhanced. Graff writes that

> the transition to both commercial and industrial capitalism in North America was a smoother one than in England, and perhaps elsewhere. Without ignoring or diminishing the significance of conflict and resistance, which certainly were present, their potential may well have been reduced as one direct consequence of the comparatively earlier and more extensive educational development and its intimate reciprocal relationship to economic change and industrialization. Schooling, in this formulation, paved the way for economic transformation.[65]

Similarly, most—though not all—scholars accept that education improved the cognitive skills of workers and enabled them to adapt better to the technological changes taking place. There is, though, widespread disagreement on the importance of this contribution. The detailed, microlevel studies necessary to resolve this debate are not available. A reasonable guess, however, would be that, although the relatively high level of schooling among American workers in the Northeast was not caused by the demands for skill of early industrialization, the workers' education helped to accelerate the quick and efficient adoption of new labor-saving machinery and techniques in both the manufacturing and the agricultural sectors.[66] Mann's claims of a 50 percent rate of return to education are clearly too high: a more realistic guess would be a rate of return in the range of 10-20 percent for a common school education.[67]

Education and Social Mobility

America has frequently been characterized as a land of opportunity, where anyone can succeed if they have good personal habits and are not afraid of hard work. According to this view, while inequalities of wealth and occupational status exist, those less fortunate have a real opportunity to improve their lives. Others dismiss this ideology as merely masking the glaring and permanent subordination of the disadvantaged in our society. While a few exceptional and token lower-class individuals may succeed, most will be relegated to their inferior positions forever.

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[65] Graff, *The Literacy Myth*, p. 232.

[66] Increased education may have also fostered more long-distance geographic mobility, which helped to redistribute existing economic resources more efficiently. George Borjas, "Self-Selection and the Earnings of Immigrants," *American Economic Review* 77 (September 1987), 531-53; Samuel Bowles, "Migration As Investment: Empirical Tests of the Human Investment Approach to Geographical Mobility," *Review of Economics and Statistics* 52 (November 1970), 356-62; Larry Sjaastad, "The Costs and Returns of Human Migration," *Journal of Political Economy* 70 (1962), 80-93.

[67] Vinovskis, "Horace Mann on the Economic Productivity of Education."

In antebellum America, the dominant ideology posited social mobility. Inequities in wealth and power were often acknowledged, but it was said that everyone could improve their lives by being frugal, temperate, and hardworking.[68] Books and newspapers celebrated individuals who overcame their disadvantages to become the next generation of business and political leaders.[69] A letter to the Newburyport *Herald* in Massachusetts, for example, asserted that

> there is no avenue open to the rich man's son that is not equally accessible to the poor boy. If our boys would but look back, and learn the history of the men who are now the most successful around them, they would see that more than nine-tenths were once poor boys, with nothing to start with in the world but their own unaided energies, and who have advanced themselves by strict adherence to truth and correct principles. The same path is open to the boys of the present day, and the opportunities for improvement ten fold greater. Let no boy, therefore, feel that his chances for success are any less because he has not rich parents to help him along.[70]

But did social mobility really exist in that society? There is no easy answer, and what answers there are depend in part on how social mobility is defined and measured. Historians, drawing upon the work of earlier sociologists, concentrate on occupational mobility. Most of these studies subdivide the nineteenth-century occupational structure into five broad categories: (1) high white-collar, (2) low white-collar, (3) skilled, (4) semiskilled, and (5) unskilled. Social mobility is also often assessed by mobility from manual occupations (skilled, semiskilled, or unskilled) to nonmanual ones (high white-collar or low white-collar). Some studies focus on the career mobility of individuals, while others look at intergenerational mobility between fathers and sons.[71]

The findings of social-mobility studies of nineteenth-century America are somewhat mixed in terms of the opportunities available to the children of semiskilled or unskilled workers. The first case study, and perhaps still the most widely cited, is that of the lives of common laborers in the

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[68] John G. Cawelti, *Apostles of the Self-Made Man* (Chicago: University of Chicago Press, 1965); Irwin G. Wyllie, *The Self-Made Man in America: The Myth of Rags to Riches* (New Brunswick, NJ: Rutgers University Press, 1954).

[69] While the idea of social mobility persisted, the definition of success changed over time with more emphasis on wealth in the mid-nineteenth century. Rex Burns, *Success in America: The Yeoman Dream, and the Industrial Revolution* (Amherst: University of Massachusetts Press, 1976).

[70] Newburyport *Herald*, March 2, 1857.

[71] Stephan Thernstrom, *The Other Bostonians: Poverty and Progress in the American Metropolis, 1880-1970* (Cambridge, MA: Harvard University Press, 1973).

small urban community of Newburyport, Massachusetts, between 1850 and 1880. Thernstrom found that while many sons of unskilled laborers who stayed in that community experienced small increases in occupational status or were able to purchase their own homes, only about one out of every six was able to move into a skilled or white-collar occupation.[72] Similar results were reported for Philadelphia in the four decades before the Civil War.[73]

Others have found higher rates of social mobility—particularly for the sons of the native-born population. Clyde Griffen's analysis of Poughkeepsie, New York, between 1850 and 1880 found that most immigrants and blacks did not fare well, but up to one-third of the sons of native-born fathers in manual trades moved up to nonmanual (white-collar) occupations—especially as owners of small craft and retail shops.[74]

A recent review of all of the studies of nineteenth-century occupational mobility concluded that there was little difference between America and Europe in regard to overall career mobility, but that there was slightly more upward mobility among unskilled workers in the United States than in Europe. Compared to their European counterparts, American workers were less likely to experience downward mobility into unskilled manual labor. In addition, there was great diversity in the rates of occupational mobility among American cities, but no simple explanations for the patterns. Furthermore, while upward mobility into skilled or nonmanual occupations was a distinct career possibility for some unskilled workers, most workers remained in the same occupational group or advanced only to a semiskilled position.[75]

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[72] Stephan Thernstrom, *Poverty and Progress: Social Mobility in a Nineteenth-Century City* (Cambridge, MA: Harvard University Press, 1964).

[73] Stuart Blumin, "Mobility and Change in Ante-Bellum Philadelphia," in Stephan Thernstrom and Richard Sennett, eds., *Nineteenth-Century Cities: Essays in the New Urban History* (New Haven: Yale University Press, 1969), pp. 165-208.

[74] Clyde Griffen, "Workers Divided: The Effect of Craft and Ethnic Differences in Poughkeepsie, New York, 1850-1880," in Stephan Thernstrom and Richard Sennett, eds., *Nineteenth-Century Cities: Essays in the New Urban History*, eds. (New Haven: Yale University Press, 1969), pp. 49-97.

[75] Harmut Kaeble, *Social Mobility in the Nineteenth and Twentieth Centuries: Europe and America in Comparative Perspective* (Leamington Spa, England: Berg Publishers, 1985).

Based upon a review of the existing studies ten years ago, Ravitch concluded that "pending further research, it does appear that upward social mobility trends have been established in certain American cities during the nineteenth and early twentieth centuries." Ravitch, *The Revisionists Revised*, p. 88.

Was education a key to social mobility in antebellum America? Certainly many of the educators who drew upon Horace Mann's work stressed the importance of education in enhancing the economic productivity of workers, but they did not focus on whether or not education promoted occupational mobility. Their reluctance to discuss the impact of education on social mobility may be due in part to their efforts not to suggest that educated workers might become dissatisfied with more menial occupations. Nevertheless, implicit in their discussions of the value of education for the individual and the society is the belief that children, by improving their education, could advance into better paying and higher-status occupations.[76]

Most of the nineteenth-century writers who discussed social mobility, however, placed less emphasis on the importance of education than on the value of good habits and hard work as the essential ingredients for advancement. While most of them assumed that a common school education was essential, few pointed to the specific advantages of additional years of schooling.[77]

Most studies of nineteenth-century careers have neither tested for nor discussed the role of education in promoting social mobility. The few historians who have commented on this issue are divided on the importance of literacy and education. Based upon a detailed study of three Canadian cities, Graff concludes that even literacy was not an important factor in helping individuals succeed—particularly among immigrants in unskilled or semiskilled occupations:

> Social thought and social ideals have, for the past two centuries, stressed the preemption of ascription by achievement as the basis of success and mobility, and the importance of education and literacy in overcoming disadvantages deriving from social origins. In the three cities, in 1861, however, ascription remained dominant. Only rarely was the achievement of literacy sufficient to counteract the depressing effects of inherited characteristics, of ethnicity, race, and sex. The process of stratification, with its basis in rigid social inequality, ordered the illiterates as it did those who were educated. Only at the level of skilled work and its rewards did literacy carry a meaningful influence. Literacy, overall, did not have an independent impact on the social structure.[78]

Several observations ought to be made about Graff's dismissal of the importance of education in helping individuals advance. First, he is only talking about workers in unskilled or

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[76] Ira Mayhew, *Popular Education for the Use of Parents and Teachers and for Young Persons of Both Sexes* (New York: Harper and Brothers, 1850).

[77] Cawelti, *Apostles of the Self-Made Man*; Wyllie, *The Self-Made Man in America*.

[78] Graff, *The Literacy Myth*, pp. 114-15.

semiskilled occupations. Therefore, better-educated individuals may have been able to avoid these occupations and use their educations to get ahead in skilled or white-collar occupations. Secondly, Graff's work is inadequate statistically. Because he relies only upon a limited crosstabulation of his data, he cannot control for the effects of the other variables in ascertaining the impact of literacy. Because the data is subdivided into several groups, Graff's sample size becomes too small to answer the questions he poses.[79]

In a study using multiple classification analysis, Michael Katz and his colleagues tested whether school attendance in Hamilton, Ontario, in 1861 led to more social mobility ten year later. They conclude that:

> School attendance itself, it is important to stress, did virtually nothing to promote occupational mobility. With other factors held constant, school attendance exerted no influence on the occupation of young men traced from one decade to another.[80]

Although this investigation of social mobility and education in Hamilton is more sophisticated than most comparable studies, it, too, suffers from serious methodological weaknesses. The measure of education employed—whether or not someone attended school in 1861—is inadequate. Since children of all ages, including those under age five, were in the multiple classification analysis, whether or not someone attended school in that year is not a reliable predictor of their eventual educational attainment.[81] A preferable index—the total number of years of schooling completed at the time social mobility was being measured—was not available. If one has to use a measure of school attendance ten years earlier, however, perhaps the analysis should be confined only to the population ages thirteen to nineteen, so that any differentiation in school attendance is more likely to approximate the differences in the total amount of schooling ever received later.

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[79] Maris A. Vinovskis, "Quantification and the Analysis of American Ante-Bellum Education," *Journal of Interdisciplinary History* 13, No. 4 (Spring 1983), 761-86.

[80] Michael B. Katz, Michael J. Doucet, and Mark J. Stern, *The Social Organization of Early Industrial Capitalism* (Cambridge, MA: Harvard University Press, 1982), p. 275. It is not absolutely clear what variables and data were used in the analysis referred to by Katz and his colleagues since they neither provide nor cite any table at this point. It is likely that they are referring back to their earlier chapter on social mobility, which includes the information on school attendance for all children in 1861 in a multiple classification analysis.

[81] This is particularly the case for very young children, because contemporaries were divided on the advisability of sending very young children to school. May and Vinovskis, "A Ray of Millennial Light."

Thernstrom, on the other hand, argues that education fostered social mobility, but he, too, fails to establish that relationship statistically. In his study of Newburyport, Thernstrom argues that a combination of parental values and of the abject poverty of the families meant that lower-class children did not stay in school and therefore were severely handicapped in terms of their future social mobility. Irish parents, for example, were so determined to own their own homes that they withdrew their teenage children from school and sent them into the labor force so that the children might contribute to paying off the mortgage. Furthermore, the depth of poverty among common laborers made it essential that their children earn money at an early age:

> The relentless pressure of poverty—stemming from the depressed age level for common labor and from sharp seasonal fluctuations in employment opportunities—forced the children of Newburyport's laborers into the job market at an early age. Sometimes a laborer went several weeks without earning a cent; then the four dollars a week his twelve-year-old son earned as a bobbin boy was the family's sole source of support. Opportunities for formal education past the age of ten or eleven, as a result, were effectively nil for working class children.[82]

Thernstrom documents the low rate of social mobility among children of unskilled workers, but does not demonstrate that this was due to their lack of education—in part because he only studied the children of the common laborers in Newburyport and not the offspring of the rest of the population. He assumed that, because children of working-class fathers received little education, while children of more affluent parents received more, education must be a key factor in the subsequent differential in occupational mobility.

Not only does Thernstrom's study not establish statistically the importance of education in social mobility, but it underestimates the extent of schooling received by children of common laborers. A more detailed analysis of the school attendance of all children in Newburyport in 1860 reveals that even among children whose fathers were unskilled laborers, approximately 90 percent of eleven- and twelve-year-olds attended school as well as a substantial portion of those ages thirteen to nineteen.[83] Thus, although children of unskilled fathers received less education in Newburyport than those from more fortunate homes, enough of the former received enough education to challenge the notion that the only or even major reason for low social mobility among children from poorer backgrounds was their lack of education.

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[82] Thernstrom, *Poverty and Progress*, pp. 22-23.

[83] Maris A. Vinovskis, "Patterns of High School Attendance in Newburyport, Massachusetts, in 1860," Paper presented at the American Historical Association Annual Meeting.

The few studies of schooling and social mobility in the nineteenth century focus on the impact of either literacy or common school education on occupational advancement, but they do not address the role of high school education. The usual assumptions are: that few individuals attended such institutions, that those who did were almost always members of an already privileged middle or upper class, and that the few children of working-class families who attended could not compete effectively with those from more advantaged homes.

The first public high school was established in Boston in 1821, but it was only in the late 1840s and 1850s that these institutions spread more rapidly in some states.[84] Looking mainly at the few urban high schools in nineteenth-century America, most scholars believe that even by the 1880s, "it was a rare thing to go to high school."[85]

A closer look, however, at certain states—such as Massachusetts, which led the way in establishing public high schools—suggests that a much higher percentage of children attended high school than we had suspected, particularly in some of the smaller and medium-sized communities. In Newburyport, almost one-third of the children in 1860 received some high school education at some point.[86] While high school attendance in Newburyport was higher than in many other medium-sized cities, nearly one out of five children in 1860 in Essex County towns with a public high school attended them. When we combine information on public high school attendance with that on private secondary school attendance for the county, it appears that 19.0 percent of all children in Essex County received the equivalent of at least some high school training. To be sure, most students attended one of these institutions only briefly and did not complete the usual three-year course of high school instruction. Nevertheless, in some communities and regions of the United States, some secondary education was more available and common than we had believed.[87]

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[84] Emit Duncan Grizzell, *Origin and Development of the High School in New England before 1865* (New York: MacMillan, 1923).

[85] Edward A. Krug, *The Shaping of the American High School, 1880-1920* (Madison: University of Wisconsin Press, 1969), p. 11. See also Paul E. Peterson, *The Politics of School Reform, 1870-1940* (Chicago: University of Chicago Press, 1985).

[86] Vinovskis, "Patterns of High School Attendance."

[87] Newburyport was also located in Essex County, Massachusetts. For details on the rates of high school attendance, see Maris A. Vinovskis, "Have We Underestimated the Extent of Antebellum High School Attendance?" *History of Education Quarterly* 28, No. 4 (Winter 1988), 551-67.

Even if high schools were more accessible in some areas, how available were they to those whose fathers were in manual occupations? Based upon his study of antebellum Massachusetts public high schools, Katz concludes that "high schools were minority institutions probably attended mainly by middle-class children."[88]

Certainly, children of fathers in white-collar occupations were overrepresented in nineteenth-century public high schools. But in some communities a sizable minority of children from the working classes attended these institutions. In Newburyport, about one out of six children whose fathers were common laborers in 1860 received some high school education, as did almost four out of ten children of fathers in skilled occupations.[89] Again, while this proportion may be high compared to other mid-nineteenth-century communities, by the end of the nineteenth century a substantial minority of high school students were from blue-collar families.[90]

Some scholars argue that nineteenth-century public high schools simply reproduced the existing capitalist structure, not only by excluding children of working-class families, but by discriminating against them in terms of opportunities and rewards within those institutions. Again, the picture is much more complex. The few in-depth studies of high school education of the period suggest that once someone entered high school, a working-class parental background did not preclude success within those institutions. In fact, David Labaree's analysis of the Central High School of Philadelphia finds that:

> students obtained admission to the school through a mixture of class background and academic ability. However, once admitted, they found themselves in a model meritocracy where academic performance was the only characteristic that determined who would receive the school's valuable diploma. Therefore, although middle-class students were still the primary beneficiaries of the high school, since they constituted the majority of those

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[88] Katz, *Irony of Early School Reform*, p. 39. For a critique of his estimating procedures, see Vinovskis, "Have We Underestimated the Extent of Antebellum High School Attendance?"

[89] Vinovskis, "Patterns of High School Attendance." Children of foreign-born parents, however, were particularly unlikely to attend high school.

[90] David L. Angus, "A Note on the Occupational Backgrounds of Public High Schools Prior to 1940," *Journal of the Midwest History of Education Society* 9 (1981), 158-83; Reed Ueda, *Avenues to Adulthood: The Origins of the High School and Social Mobility in an American Suburb* (Cambridge: Cambridge University Press, 1987).

admitted, this class effect was mediated through a form of meritocracy that held all students to the same rigorous academic standard.[91]

Did high school attendance promote social mobility or did it merely reinforce and legitimize the existing capitalist system? Again, scholars are divided on this question, and the empirical support for either view is limited. As mentioned previously, Bowles and Gintis, as well as Katz, challenge the notion that a high school education provided real opportunities for advancement for nineteenth-century Americans, but they provide little specific evidence to bolster their arguments.[92] Similarly, Labaree, who has a more positive view of the effect of a high school education, does not trace the students of the Philadelphia Central High School to their subsequent jobs to see what effect attendance actually had on their careers.[93] But Ueda's analysis of the intergenerational occupational mobility for Somerville, Massachusetts, grammar and high school students in the last quarter of the nineteenth century finds that

> [t]he blue-collar son who was raised in the suburb and obtained the high school credential had powerful advantages over the average blue-collar son in Boston in obtaining white-collar employment. Blue-collar sons who went to high school in Somerville achieved a higher and faster rate of entry into the white-collar field than blue-collar sons in Boston of all levels of schooling.[94]

Similarly, Joel Perlmann's detailed, statistically sophisticated study of secondary schooling in Providence, Rhode Island, between 1880 and 1925 finds that attending high school greatly improved one's chances for upward occupational mobility—even after controlling for the effects of family background. Furthermore, the advantages of a high school education were not reserved only for students from middle-class homes, but were also available to the working-class children who were increasingly attending high schools in the early decades of the twentieth century:

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[91] David F. Labaree, *The Making of an American High School: The Credentials Market and the Central High School of Philadelphia, 1838-1939* (New Haven: Yale University Press, 1988), p. 37. Similarly, Joel Perlmann found that grades in high school were a better predictor of graduation than social class background. Joel Perlmann, "Who Stayed in School? Social Structure and Academic Achievement in Determination of Enrollment Patterns, Providence, Rhode Island, 1880-1925," *Journal of American History* 72, No. 3 (December 1985), 588-614.

[92] Bowles and Gintis, *Schooling in Capitalist America*; Katz, *Irony of Early School Reform.*

[93] Labaree, *The Making of an American High School.*

[94] Ueda, *Avenues to Adulthood*, p. 179.

> The suspicion that secondary schooling did not help working-class boys, or immigrant working-class boys, who received it cannot be sustained. Education did not merely reflect the advantages of birth. Immigrant working-class boys who reached high school entered much more attractive occupations than others of similar social backgrounds, occupations.[95]

As we have seen, the exact relationship between schooling and occupational mobility in nineteenth-century America remains to be documented. Several scholars have made important contributions to this effort, but none has established conclusively whether or not schooling promoted occupational mobility and economic well-being for the individual worker.[96] Studies for the early twentieth century, however, suggest that schooling played a key role in fostering individual economic advancement.[97] While comparable work for antebellum America remains to be done, enough fragmentary evidence exists to suggest that education may have helped individuals to improve their economic well-being and occupational status.

Conclusion

Nineteenth-century educational development was clearly related to and influenced by economic changes, but neither as simply nor as directly as some have suggested. Mass public education was neither caused nor even preceded by industrialization in antebellum America. Rather, it arose during the colonial period and early nineteenth century in response to religious and political principles—particularly in New England. As a result, the United States was an unusually literate country by the time it first experienced industrialization.

Although industrialization did not cause the rise of mass education, it helped to create an environment in which schooling could continue to flourish and improve. The turmoil—potential and actual—associated with industrial development encouraged many Americans to support mass public education, which was perceived as inculcating orderly virtues. Though industrial

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[95] Joel Perlmann, *Ethnic Differences: Schooling and Social Structure among the Irish, Italians, Jews, and Blacks in the American City, 1880-1935* (Cambridge: Cambridge University Press, 1988), p. 38.

[96] While Ravitch suspects that schooling may have fostered social mobility in the past, her review of the few earlier studies found no conclusive evidence either way. Ravitch, *The Revisionists Revised*, p. 90.

[97] Richard Jensen, "Education and Life Chances in the Job Market", (Paper presented at the Social Science History Association Meeting, New Orleans, November 1987); Richard Jensen, "The Causes and Cures of Unemployment in the Great Depression," *Journal of Interdisciplinary History* (forthcoming); Perlmann, *Ethnic Differences*. Joseph Kett suggests that education was becoming a more important factor for getting ahead in the late nineteenth and early twentieth centuries. Joseph F. Kett, *Rites of Passage: Adolescence in America, 1790 to the Present* (New York: Basic Books, 1977).

development was only one of many factors that caused nineteenth-century Americans anxiety about the future, that fear was important in mobilizing support for public schooling. In addition, by contributing to the general economic development of the United States, industrialization made the additional public expenditures for education more tolerable.

While some industrialists and other capitalists were active in antebellum school reforms, they by no means dominated them, as some revisionists have implied. Nineteenth-century educational reform efforts were supported by broad-based coalitions that brought together individuals and groups from very diverse backgrounds, including the working class. In some ways, antebellum school reform resembled an evangelical crusade by individuals who shared a deep, though often naive, faith in the power of education to redeem individuals and to preserve and protect the existing social and political order.

Schools did not simply correspond to the workplace and were not just instruments of the capitalists. While the schools provided cognitive skills and socialization that prepared children for their adult work roles, they also taught democratic and egalitarian ideas that contradicted the unequal and hierarchical aspects of antebellum society. Schools were a contested and semiautonomous domain, where different individuals and groups sought to educate and to indoctrinate the next generation with what each considered to be the proper views and values.

What little attention nineteenth-century classical economists devoted to the economic role of education stressed teaching discipline to the labor force and minimizing the tensions generated by industrialization. Supporters of the workers in America wrote of the importance of free public schooling for everyone, but usually did not emphasize the aspect of education that enhanced the economic productivity of individuals or of society as a whole.

Horace Mann was almost alone in printing out the importance of education for economic productivity. Although his analytical methods were biased and statistically inadequate, he succeeded in convincing the public and many policymakers that education was a worthwhile economic investment for the individual and for society.

Most economists today accent the importance of education as a form of human-capital investment, even though some historians express serious reservations about the economic productivity of education in antebellum America. The lack of adequate studies limits anything we can say definitively about this issue, but it appears that public and private schooling contributed to

the economic well-being of nineteenth-century Americans—in a more modest fashion, however, than proclaimed by enthusiasts like Mann.

Finally, nineteenth-century America had a deep, abiding faith in the possibility of social mobility. Current scholarship tends to support the notion that social mobility existed for many Americans, albeit in far fewer instances than we had previously assumed. Some scholars, on the other hand, doubt even the possibility of any substantial social mobility in antebellum America, since they view the capitalist system as merely reproducing the existing social and economic structure.

There is also no agreement among researchers on whether or not education was an important factor in what social mobility there was. Many scholars question whether schooling, particularly at the primary levels, helped children of blue-collar workers to get ahead. They also see the few secondary schools in that society as being reserved in practice almost exclusively for members of the more privileged classes.

Other scholars maintain that education contributed to the social mobility and economic well-being of at least some members of the working classes. They also tend to see the emerging public high schools as somewhat accessible to children from economically disadvantaged backgrounds and view these institutions as paradoxically egalitarian once these children were enrolled.

The controversy over the relationship between education and social mobility in antebellum America cannot be resolved for now, given how few studies exist. Nevertheless, the evidence suggests that schooling contributed to the occupational advancement in individual cases, but that perhaps universal education was less essential in the past than it may be today.

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